

### **Abstract**

Olfactory receptors (ORs) encompass the largest gene superfamily in vertebrates. The present invention relates to data mining methods capable of identifying gene family members and particularly mouse OR (MOR) gene family members. The data mining method of the present invention has been used to identify 1296 mouse ORs from the nearly complete Celera mouse genome by a comprehensive data mining effort. MOR polypeptides, proteins, and nucleic acid molecules are disclosed. In addition to isolated, full-length MOR proteins, the invention further provides for MOR fusion proteins and anti-MOR antibodies. The invention also provides MOR nucleic acid molecules, recombinant expression vectors containing a nucleic acid molecule of the invention, host cells into which the expression vectors have been introduced and non-human transgenic animals in which a MOR gene has been introduced or disrupted. The MORs are useful for identifying compounds for treating anosmias, pest control and for developing better odorants, such as perfumes and food enhancers.